

Translation

PATENT COOPERATION TREATY

PCT/CH2003/000099



PCT

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08 FEB 2005

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference <n°>522 | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/CH2003/000099 | International filing date (day/month/year) 08 février 2003 (08.02.2003) | Priority date (day/month/year) 08 août 2002 (08.08.2002) |
| International Patent Classification (IPC) or national classification and IPC G08B 21/08, E04H 4/06 | | |
| Applicant BOUJON, Claire-Lise | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 14 juin 2003 (14.06.2003) | Date of completion of this report 19 August 2004 (19.08.2004) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/CH2003/000099

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 1-13 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____ 1-13 _____, filed with the letter of _____ 21 July 2004 (21.07.2004)
- ☒ the drawings:
pages _____ 1/8-8/8 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Intern. Application No.

PCT/CH 03/00099

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-13 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-13 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-13 | YES |
| | Claims | | NO |

2. Citations and explanations

Reference is made to the following document:

D3/ US-A-5 486 814 (QUINONES SANDRA L) 23 January 1996
(1996-01-23)

D3, which is considered to be the prior art closest to the subject matter of independent claim 1, describes a bracelet from which the subject matter of the present claim 1 differs in that it includes means for actuating an automatic rescue device.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem that the present invention is intended to solve can be considered to be that of ensuring the rescue of a person wearing a monitoring bracelet who is faced with an emergency.

The solution to this problem, as proposed in claim 1 of the present application, does not follow from the prior art and is considered to involve an inventive step (PCT Article 33(3)).

Claims 2 to 13 are dependent on claim 1 and thus also comply, as such, with the requirements of novelty and inventive step of the PCT.

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CLAIMS

1. Device for rescue, safety in swimming-pools or leisure parks, characterised in that it comprises within a wristband (1):
- 5 - a cardiac arrest detector (65), Figure 15, Figure 12, Figure 14c, a printed circuit (7), a transmitter (8), a microcontroller (9), a transponder (10), at least one battery (13), a personal identification code (2), a means of display, a panic button (4) Figure 3, a contact button (75), means for automatic activation of a device for rescue, self-protection or a support plan,
- 10 - said device comprising a location detection device (27) with at least one central receiver capable of communicating with other centres (31) and of warning a support centre (35) Figure 7,
- 15 - said wristband comprising, as an option, a water detector (39) and means for activation/de-activation of a water detector (39), Figure 8,
- 20 - said wristband, as an option, also being associated with an inflatable grille (26) which comprises certain means for raising, for monitoring of vacuum and monitoring of inflation/deflation, Figure 7.
- 25 2. Device as per claim 1, characterised in that the management of the panic button (4) and of the cardiac-arrest detector (65) comprises a pulse detector (88), made up of two light sources, electroluminescent diodes, one on the wrist (99), which passes through human tissue (5) and the other (96) below the wrist, included in the wristband, whose beam is reflected on a light sensor (6), Figure 2, an alarm code corresponding to pressing of the panic button (89), such cardiac-arrest detector comprising Y/N determination of whether a pulse is present (93), reading of pulses in loops, with re-setting (91), a maximum threshold for tolerance of anomalies, transmission of alarm codes (95) by FM when the anomalies counter exceeds the authorised limit or when the panic button (4) is activated as per Figure 15.
- 30 3. Device as per claims 1 & 2, characterised in that the pulse detector is made up of 2 x 2 diodes (5) (96), located on either side of half of the wrist, and above/below the wrist, with two light detectors (6) on either side of the wrist.
4. Device as per claims 1, 2 and 3, characterised in that the pulse detector is made up of a diode (5) on one side of the wrist and a reference diode (96) on the opposite side, which is surrounded by two light sources for the sensing of the beam from each of the diodes.
5. Device as per claim 1, characterised in that the case of the wristband (1) comprises the identification code (2) recorded in the transponder (10), which is capable by means of a transponder (18) of opening and closing doors and lockers and raising an alarm (24). Lockers are managed globally or in rows via the microcontroller (9), Figure
- 4.

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- 5 6. Device as per Claim 1: characterised in that the water detector (39) is made up either of a duct (41) with at least two apertures through which water can enter (42), such duct containing electrodes (40) connected to a water detection circuit which will activate a rescue device or activate an alarm, refer Figure 8, or two contacts sufficiently far apart from each other, and not in contact with the skin; with protection means rendering them sealed during swimming.
- 10 7. Device as per Claim 1: characterised in that on the case of the wristband (1), the panic button (4) is located in a cavity and is covered by a sealed membrane (47), the same arrangement prevailing for the contact button with the wrist, Figure 9.
8. Device as per claim 1, characterised in that the location detectors are field detectors (49) with antennae (32) passing through a multiplexer (67), a level adapter (68) and the microcontroller (9), Figure 13.
- 15 9. Device as per claim 1, characterised in that the inflation of the grille is managed by a reserve of compressed air/gas (29), an emergency electro-valve E1 (55), an electro-valve for non-emergency situations E2 (56), an electro-valve for draining E3 (57), a pressure relief valve D1 (58) as an emergency in the event that the necessary inflation pressure is not the same as for the power supply for draining, a pressure relief valve D2 (59) for non-urgent situations, a pressure switch (60), a venturi (62) and a vacuum switch (63) which provides for monitoring for vacuum. The entire system is managed by the microcontroller (9) to which there are connected the cardiac-arrest detector (65), the panic button (4), the contact button (75), the non-emergency escalation button (69), the vacuum switch (63), the descent button (70), the lifeguard button (71), the alarm (24), a monitor (66), a control keyboard (72), a display for the centre (73) and a computer (74), Figure 14c.
- 20 10. Device as per claim 1, characterised in that the grille is raised either by straps (51) and strap guides (53) attached below the cylinders, or with extendable bars (97) which are housed within the strap guides, such supporting bars, once extended, resting on the edge of the swimming pool and thus raising the grille in order to enable the robot arm to slide over the surface of the water, if the robot has an arm.
- 25 11. Device as per claim 1, characterised in that the antennae, and any equipment to detect the wristband passing through a zone, is connected to a solar-recharging battery or batteries.
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